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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,306	04/09/2004	Michael Francis Higgins	08831.0067	9710
42304	7590	04/14/2008		
CLAIRVOYANTE, INC. 874 GRAVENSTEIN HIGHWAY SOUTH, SUITE 14 SEBASTOPOL, CA 95472			EXAMINER VO, QUANG N	
			ART UNIT 2625	PAPER NUMBER
			MAIL DATE 04/14/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/821,306

**Applicant(s)**

HIGGINS ET AL.

**Examiner**

QUANG N. VO

**Art Unit**

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 3/20/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

With regard to claim 1, applicant argues that Primarano does not disclose a triangle calculator (or any region apart from triangle) to determine a chromaticity region for the system select a conversion matrix to then perform the conversion.

In reply, Primarano discloses triangle calculator (or any region apart from triangle) determines in which chromaticity triangle the input data resides (e.g., converting xyY values to XYZ tristimulus values (XYZ tristimulus values defining chromaticity region), column 4, line 44 – column 5, line 21); a matrix multiply unit, said unit multiplying the input data (e.g., the intensities (input data) I(1), I(2), and I(3), column 5, lines 50-57) with a conversion matrix selected (e.g., a phosphor matrix M3, column 5, lines 40-57).

Applicant argues that Winkelman does not teach matrix selected from among a plurality of such matrices whose selection is determined by a chromaticity region calculator determines where the input image data resides.

In reply, Winkelman differs from claim 1, in that he does not explicitly teach RGBW format and triangle calculator determines in which chromaticity triangle the input data resides; a matrix multiply unit, said unit multiplying the input data with a conversion matrix selected.

Primerano discloses triangle calculator (or any region apart from triangle) determines in which chromaticity triangle the input data resides (e.g., converting xyY values to XYZ tristimulus values (XYZ tristimulus values defining chromaticity region),

column 4, line 44 – column 5, line 21); a matrix multiply unit, said unit multiplying the input data (e.g., the intensities (input data) I(1), I(2), and I(3), column 5, lines 50-57) with a conversion matrix selected (e.g., a phosphor matrix M3, column 5, lines 40-57).

Cok discloses converting RGB to RGBW format (column 5, lines 25-38).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 6, 9, 10-13, 15-16, 19- 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelman (US 5,668,890) in view of Primerano et al. (Primerano) (US 6,885,380) and Cok (US 6,903,378).

With regard to claim 1, Winkelman discloses a system for converting input image data in a first color space to output image data in a second color space (e.g., converter 10, column 5, line 57 – column 6, line 22), said system comprising: a converter for calculating chroma/luma values and calculating hue angle of said input image data from a first color space (column 6, lines 24-41).

Winkelman differs from claim 1, in that he does not explicitly teach RGBW format and triangle calculator determines in which chromaticity triangle the input data resides; a matrix multiply unit, said unit multiplying the input data with a conversion matrix selected.

Primerano discloses triangle calculator (or any region apart from triangle) determines in which chromaticity triangle the input data resides (e.g., converting xyY values to XYZ tristimulus values (XYZ tristimulus values defining chromaticity region), column 4, line 44 – column 5, line 21); a matrix multiply unit, said unit multiplying the input data (e.g., the intensities (input data) I(1), I(2), and I(3), column 5, lines 50-57) with a conversion matrix selected (e.g., a phosphor matrix M3, column 5, lines 40-57).

Cok discloses converting RGB to RGBW format (column 5, lines 25-38).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified to include RGBW format as taught by Cok and triangle calculator determines in which chromaticity triangle the input data resides and a matrix multiply unit, said unit multiplying the input data with a conversion matrix selected as taught by Primerano. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Winkelman by the teaching of Primerano to convert image data more accurately and have modified Winkelman by the teaching of Cok to save energy power when image data RGB transferring to RGBW format (column 5, lines 39-45).

With regard to claim 2, Winkelman discloses wherein said converter further comprises a means for calculating the absolute value of chrominance data from said input image data (column 32, line 56 – column 33, line 3).

With regard to claim 3, Winkelman discloses wherein said converter further comprises a means for determining the octant of the hue angle of the input image data (column 6, lines 23-41).

With regard to claim 5, Winkelman discloses wherein said matrix multiply unit further comprises means for selecting at least one 3.times.3 matrix for converting said input image data (column 14, lines 3-4).

With regard to claim 6, Primerano discloses calculating a plurality of chromaticity triangle conversions and a multiplexor for selecting one of said plurality of chromaticity triangle conversions (column 4, lines 44-53).

With regard to claim 9, Primerano discloses wherein the color primaries and white point of said input color data are identical to the sRGB standard (column 4, lines 44-53).

With regard to claim 10, Primerano discloses wherein the color primaries of said input color data are not known, and said system converts said input color data to CIE XYZ and into RGBW data (column 4, lines 44-65).

Referring to claim 11:

Claim 11 is the method claim corresponding to operation of the device in claim 1 with method steps corresponding directly to the function of device elements in claim 1. Therefore claim 11 is rejected as set forth above for claim 1.

Referring to claim 12:

Claim 12 is the method claim corresponding to operation of the device in claim 2 with method steps corresponding directly to the function of device elements in claim 2. Therefore claim 11 is rejected as set forth above for claim 2.

Referring to claim 13:

Claim 13 is the method claim corresponding to operation of the device in claim 3 with method steps corresponding directly to the function of device elements in claim 3. Therefore claim 13 is rejected as set forth above for claim 3.

Referring to claim 15:

Claim 15 is the method claim corresponding to operation of the device in claim 5 with method steps corresponding directly to the function of device elements in claim 5. Therefore claim 15 is rejected as set forth above for claim 5.

Referring to claim 16:

Claim 16 is the method claim corresponding to operation of the device in claim 6 with method steps corresponding directly to the function of device elements in claim 6. Therefore claim 16 is rejected as set forth above for claim 6.

Referring to claim 19:

Claim 19 is the method claim corresponding to operation of the device in claim 9 with method steps corresponding directly to the function of device elements in claim 9. Therefore claim 19 is rejected as set forth above for claim 9.

Referring to claim 20:

Claim 20 is the method claim corresponding to operation of the device in claim 10 with method steps corresponding directly to the function of device elements in claim 10. Therefore claim 20 is rejected as set forth above for claim 10.

With regard to claim 21, the subject matter is similar to claim 1. Therefore the rejection on claim 21 is set forth above as claim 1.

Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelman (US 5,668,890), Primerano (US 6,885,380) and Cok (US 6,903,378) as applied to claims 1-3 above, and further in view of Kobayashi (US 5937089).

With regard to claim 4, Winkelman, Primerano and Cok differ from claim 4, in that they do not explicitly teach converter further comprises a means for swapping the x and y chroma values, depending upon the results of a test condition.

Kobayashi discloses swapping the x and y chroma values, depending upon the results of a test condition (column 15, lines 8-24).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified to include converter further comprises a means for swapping the x and y chroma values as taught by Kobayashi. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Winkelman and Primerano by the teaching of Kobayashi to convert image data conveniently from one output device to another.

Referring to claim 14:

Claim 14 is the method claim corresponding to operation of the device in claim 4 with method steps corresponding directly to the function of device elements in claim 4. Therefore claim 14 is rejected as set forth above for claim 4.

Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelman (US 5,668,890), Primerano (US 6,885,380) and Cok (US 6,903,378) as



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applied to claims 1 and 11 above, and further in view of Tallman et al. (Tallman) (US 5,311,295).

With regard to claims 7 and 17, Winkelman, Primerano and Cok differ from claim 7, in that they do not explicitly teach out of gamut detection unit; and gamut clamping unit to clamp the gamut of detected out of gamut image data.

Tallman discloses out of gamut detection unit; and gamut clamping unit to clamp the gamut of detected out of gamut image data (column 2, line 65 – column 3, line 43).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Winkelman, Cok and Primerano to include out of gamut detection unit; and gamut clamping unit to clamp the gamut of detected out of gamut image data as taught by Tallman. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Winkelman, Cok and Primerano by the teaching of Tallman to detect gamut errors more affectively.

Referring to claim 17:

Claim 17 is the method claim corresponding to operation of the device in claim 7 with method steps corresponding directly to the function of device elements in claim 7. Therefore claim 17 is rejected as set forth above for claim 7.

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelman (US 5,668,890), Primerano (US 6,885,380), Cok (US 6,903,378) and Tallman (US 5,311,295) as applied to claims 7 and 17 above, and further in view of Kobayashi (US 5,937,089).

With regard to claim 8, Winkelman, Primerano, Cok and Tallman differs from claim 8, in that they do not explicitly teach gamut clamping unit computes the the ratio of the width of the color-space relative to the maximum component of the out-of-gamut color.

Kobayashi discloses gamut clamping unit computes the ratio of the width of the color-space relative to the maximum component of the out-of-gamut color (column 13, lines 19-46).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Winkelman, Primerano, Cok and Tallman to include the ratio of the width of the color-space relative to the maximum component of the out-of-gamut color as taught by Kobayashi. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Winkelman, Primerano, Cok and Tallman by the teaching of Kobayashi to detect out of gamut effectively in image processing.

Referring to claim 18:

Claim 18 is the method claim corresponding to operation of the device in claim 8 with method steps corresponding directly to the function of device elements in claim 8. Therefore claim 18 is rejected as set forth above for claim 8.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Vo whose telephone number is 5712701121. The examiner can normally be reached on 7:30AM-5:00PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on 5712727440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang N Vo/

Examiner, Art Unit 2625

/King Y. Poon/

Supervisory Patent Examiner, Art Unit 2625